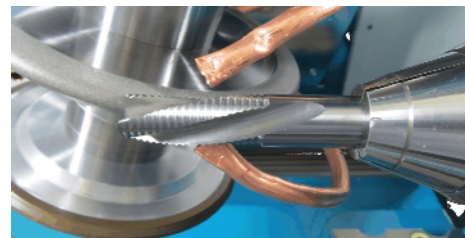
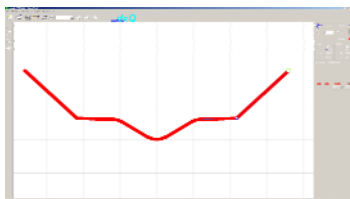
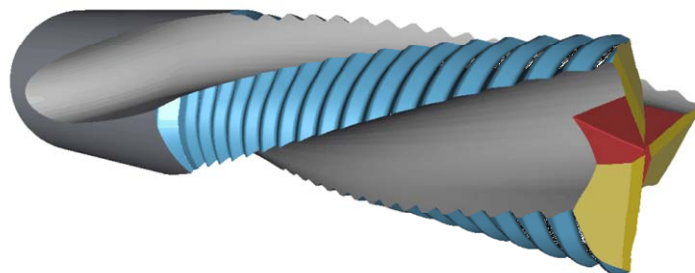


## Roughing Endmill Ø20 Z3

A01-800

The shape of the flute of roughing endmills with negative helix can be optimized using a form wheel, where the runout length of the wheel towards the shank is reduced. The roughing profile is ground using a DXF-formwheel as sketched below. The single peak form allows to use the same wheel for various pitches of the profile.



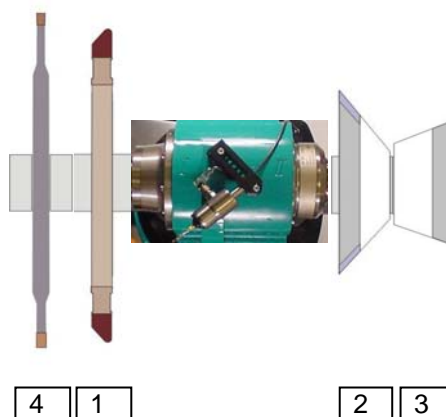
### 1. Cycletime for Production

Workpiece:	Ø 20 mm, Z 3, Length 50 mm, Helix -20°					
Material	CARBIDE					
Operations	Probe	Flute 1	Gashing	End 2	End 1	Rough. Prf.
Feed [mm/Min]	2000	55	100	60	120	400
Power [kW]		8	2	1	1	3
Cutting feed [m/s]		18	22	22	22	22
Used wheels		1	2	3	3	4
Grinding time [s]	12	228	42	57	35	460
Total cycle time	13 Min 54					

The cycle times are indicative. Material to be ground, grinding wheels, coolants can influence the cycle times considerably.

### 2. Used Grinding Wheels

1	1V1 Ø175 D64 DXF
2	12V9 Ø125 D64
3	11V9 Ø100 D64
4	14A1 Ø200 D64



### 3. Machine and Software Requirements

Machines: 5 axes CNC grinders : GEMINI DMR 15 kW Coolant: Synthetic Oil, pressure 6 bar  
 Control: Fanuc 160i/310i Software: Quinto 5  
 Accessories:

Responsible engineer: OP. 15.11.10

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